## REMARKS

In the present application, claims 1-27 are pending. Claims 1-3, 5-6 and 8-13 are rejected, and claims 1, 8-9, 11-12, 14-17, and 22 are objected to in the present Office Action. Claims 18-21 and 23-27 are allowed. In response, Applicant is amending claims 1, 4, 7, 8-9, 11-12, 14-16, and 22 and adding new claims 28-29. No new matter is being added. In view of the following amendments and remarks, Applicant respectfully requests reconsideration of the application.

### Objections to the Claims

In paragraph 3, the Examiner objected to claims 1, 8-9, 11-12, and 14-17 for various informalities. In response, Applicant is amending claims 1, 8-9, 11-12, and 14-16. Specifically in claim 1, "boundary" is replaced with "bounding". Further in claims 8, 9, 11, and 14-16, Examiner's objection to "to be drawn by" is amended to refer to destination pixel locations or destination operands. Applicant believe this amendment more precisely describes the process because the pixels will be or are being drawn to the destination pixel locations. Finally, claim 22 is amended to change its dependency to claim 20.

### Objection to the Specification

In paragraph 4, the Examiner objected to the specification because "it fails to clearly described (sic) how a first comparator is generating a first resultant bit as recited in claim 14." Further, "the specification fails to provide any connection between a second comparator for ... second resultant bit, as recited in claim 15, no connection between a third comparator for ... third resultant bit, as recited in claim 16, and no suggestion of a logic OR gate for receiving the first, second, and third resultant bits ... second graphics primitives as called for in claim 17."

As suggested by the Examiner, Applicant is amending the specification to parallel the claims. Specifically, Applicant has added discussion regarding comparators and respective resultant bits to the third paragraph on page 23. Applicant has also added discussion in the same paragraph regarding the OR gate as disclosed in claim 17.

## Objection to the Drawings

In paragraph 5, the Examiner objected to the drawings under 37 CFR 1.83(a) for not showing every feature of the invention specified in the claims. Specifically, the "first comparator" of claim 14, the "second comparator" of claim 15, the "third comparator" of claim 16, and the "logic OR gate for receiving the first, second, and third resultant bits... primitives" recited in claim 17 must be shown. In response, Applicant is proposing drawing corrections to FIG. 7 .

In paragraph 6, the Examiner objected to the drawings for failing to comply with 37 CFR 1.84(p)(5) for not including reference signs mentioned in the description. In response, Applicant is further amending FIG. 7 to include reference numbers for the single destination region 701 and the two source regions 702 and 703.

In paragraph 7, the Examiner object to the drawings under 37 CFR 1.83(a) for failing to show the "processing/executing primitive D; processed/executed P; candidate primitive P; dispatched primitive D..." Applicant is both amending the specification and drawings. In the specification (second paragraph, page 15), Applicant clarifies that previously dispatched primitive $D$ is the currently processing/executing primitive, while candidate $P$ is the is the new primitive which has yet to be processed/executed. Corresponding reference numbers are also added to FIG. 4 illustrating these primitives.

Applicant, however, does not believe that "the function depend (P,D)", "SP", "DP", "SD", and "DD" need to be shown in the drawings. The function is not a structural detail as the Examiner contends but an equation utilizing "SP", "DP", "SD", and "DD", which represent source and destination regions of the primitive P and primitive D, respectively, as clearly described in the specification.

## Rejection under 35 USC §102

In paragraph 9 of the Office Action, the Examiner rejected claims 1-3 and 5-6 under 35 USC §102(e) as being anticipated by *Dye* (U.S. Patent No. 6,108,014). Applicant respectfully traverse with respect to the amended claims. Claim 1 now recites "...calculating a first bounding box for the first graphics primitive, the first bounding box surrounding at least one source operand for the first graphics primitive; calculating a second bounding box for the second graphic primitive, the second bounding box

surrounding a destination operand of the second graphic primitive...wherein a dependency is detected if the bounding boxes overlap."

*Dye* does not disclose having distinctive bounding boxes for source and destination operands and utilizing these specific bounding boxes to determine dependency. According to the Examiner's argument, col. 67, lines 6-8 discloses "the first bounding box ... [inherently] surrounding a source operand." The referred to paragraph then goes on to describe the comparison of these "source" bounding boxes (i.e., Box 1 and Box 2). In contrast, the present invention does not care if source bounding boxes overlap; "dependency is said to be false for any two concurrently dispatched primitives even if their source regions overlap..." (page 16, line 4-5). Dependency only occurs if the source region for either primitive overlaps with the destination region of the other primitive or the destination regions of the two primitives overlap.

Further, *Dye* does not discuss comparison of any "destination" bounding boxes. Referring to Examiner's rejection to claim 3, the Examiner refers to col. 67, lines 6-8 for support for a bounding box, but refers to col. 67, lines 50-56 for support of a destination operand. However, col. 67, lines 50-56 merely discusses "each Window Workspace area includes a field which contains one or more slopes for the edges for the objects being rendered." There is no discussion of bounding boxes surrounding the Window Workspace area, nor the use of these bounding boxes for dependency detection. Further, the Examiner's own arguments with respect to claim 2 states that the bounding boxes (defined for each object in X, Y, Z space identifying the outer bounds of the object) of col. 67, lines 6-8 are inherently a source bounding box. If these bounding boxes are inherently source bounding boxes, then they cannot also be destination bounding boxes. Therefore, *Dye* does not anticipate claim 1.

### Rejection under 35 USC §103

In paragraph 11, the Examiner rejected claims 8-13 under 35 USC §103(a) as being unpatentable over *Dye*. Applicant respectfully traverses with respect to the amended claims. Claim 8 now recites "...comparing a set of destination pixel locations of the first graphics primitive with a set of destination pixel locations of the second graphics primitive; and determining whether a dependency exists between the first and

second graphics primitives as a function of the comparison of the destination pixel locations of the first and second graphic primitive." Further, claim 11 now recites, "… comparing a set of destination pixel locations of the first graphics primitive with at least one set of source pixel locations of the second graphics primitive…"

Similar to the arguments of claim 1, *Dye* does not discuss comparison of a set of destination pixel locations. Using Examiner's previous arguments, a destination operand (i.e., the set of destination pixel location) is the window workspace area (refer to Examiner's argument with respect to claim 3). However, *Dye* never discusses using these window workspace areas in a comparison to determine dependency. *Dye* only refers to the use of X, Y, Z space (which Examiner refers to as the "source bounding box") for comparison. The Examiner notes that "the source operand characterizes the Z memory of Z values of X, Y area of box 1 or 2" and thus "can be used as the source operand for the locations of pixels by the second object" (Page 10 of the Office Action). However, the present invention defines a source operand as "sets of pixel locations that each primitive *reads* in order to complete its drawing operation" (page 15, lines 3-4). If the Examiner is to equate these two statements, then as previously argued by the Applicant, references to the same X, Y, Z areas of *Dye* cannot also refer to destination operands (where the primitive will *draw* its graphics). Therefore, there is no reference in *Dye* to comparing a set of destination pixel locations with another set of destination pixel locations or with a set of source pixel locations, nor would it have been obvious for one skilled in the art to do so. Therefore, claims 8 and 11 are not obvious in view of *Dye*. Further because claims 9-10 and 12-13 depend from claims 8 and 11, respectively, these claims are not obvious for the same reasons.
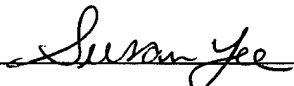
## Allowable Subject Matter

In paragraph 12, the Examiner found claims 18-21 and 23-27 to be allowed over the prior art. Applicant thanks the Examiner for the allowance of these claims.

In paragraph 13, the Examiner found claims 4, 7, 14-17 to be allowable if informality objections are corrected. Applicant is amending these claims, and believe they are now in an allowable state.

Based on the foregoing amendments to the claims and the above remarks, Applicant believes that the objections and rejections in the Office Action of March 21, 2003 are fully overcome, an that the application is in condition for allowance. If the Examiner has questions regarding the case, the Examiner is invited to contact Applicant's undersigned representative.
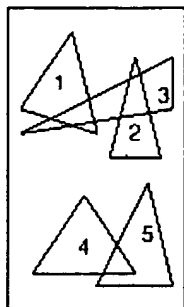
Respectfully submitted,

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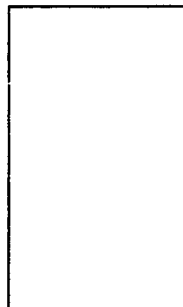
fetch queue
(unexamined)
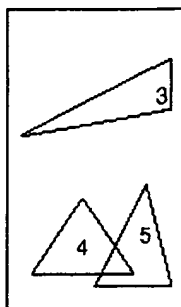
in flight
(running)

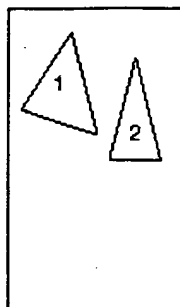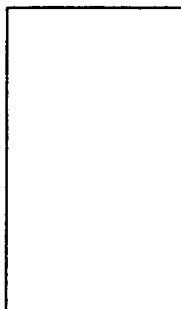FIG. 4a
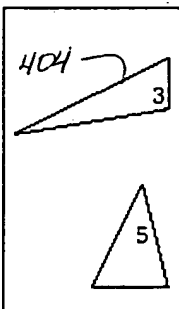
fetch queue
(unexamined)

in flight
(running)

FIG. 4b

fetch queue
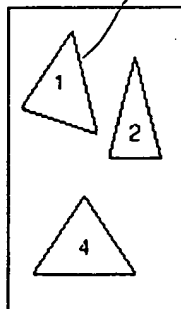(unexamined)

res. stations
(waiting)

in flight
(running)

402
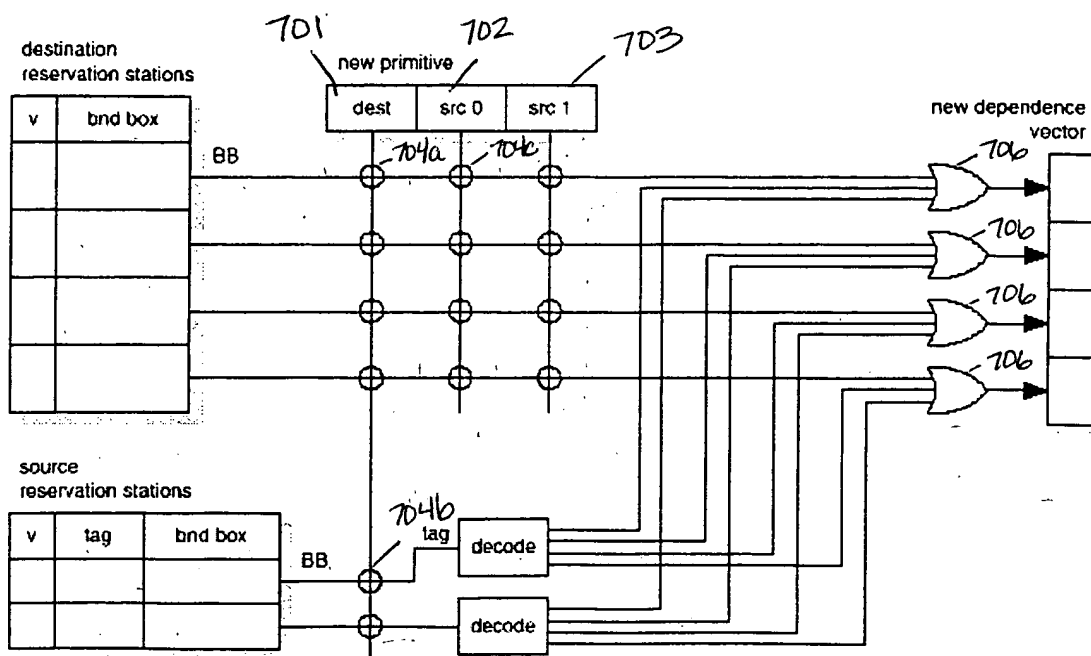
404

FIG. 4c

destination
reservation stations

701
new primitive

702

703

| v | bnd box |
|---|---------|
|   |         |
|   |         |
|   |         |
|   |         |

| dest | src 0 | src 1 |
|------|-------|-------|

new dependence
vector

BB

704a    704b    706    706    706    706

source
reservation stations

| v | tag | bnd box |
|---|-----|---------|
|   |     |         |
|   |     |         |

BB

704b

tag    decode

decode

FIG. 7